RESOLUTION NO. 2017-6

A RESOLUTION OF THE VILLAGE COUNCIL OF THE VILLAGE OF KEY BISCAYNE, FLORIDA, AUTHORIZING THE VILLAGE MANAGER TO ISSUE A WORK ORDER, CONSISTENT WITH THE PROPOSAL ATTACHED AS EXHIBIT "A," TO THE CORRADINO GROUP, INC. FOR UTILITY DATA GATHERING RELATING TO THE VILLAGE'S PROPOSED UNDERGROUNDING OF UTILITY LINES WITHIN THE VILLAGE; AND PROVIDING FOR AN EFFECTIVE DATE.

WHEREAS, the Village of Key Biscayne ("Village") issued Request for Qualifications No. 2016-02-09 ("RFQ") for continuing professional engineering services; and

WHEREAS, pursuant to the RFQ, the Village Council selected the Corradino Group, Inc. (the "Corradino") as one of the consultants to provide continuing professional engineering services and authorized the Village Manager to execute an agreement with Corradino; and

WHEREAS, Corradino has provided a proposal, attached as Exhibit "A," for utility data gathering relating to the Village's proposed undergrounding of utility lines within the Village (the "Project"); and

WHEREAS, the Village Council desires to authorize the Village Manager to issue a work order for the Project consistent with the proposal attached as Exhibit "A" and the professional services agreement entered into between the Village and Corradino; and

WHEREAS, the Village Council finds that this Resolution is in the best interest and welfare of the residents of the Village.

NOW, THEREFORE, BE IT RESOLVED BY THE COUNCIL OF THE VILLAGE OF KEY BISCAYNE, FLORIDA, AS FOLLOWS:

Section 1. Recitals Adopted. That each of the recitals stated above is hereby adopted and confirmed.

Section 2. **Village Manager Authorized.** The Village Manager is hereby authorized to issue a work order to Corradino for the Project that is consistent with the proposal attached hereto as Exhibit "A" in an amount not to exceed $198,916.94.

Section 3. **Effective Date.** That this Resolution shall be effective immediately upon adoption hereof.

PASSED AND ADOPTED this 24th day of January, 2017.

MAYOR MAYRA PEÑA LINDSAY

ATTEST:

CONCHITA H. ALVAREZ, MMC, VILLAGE CLERK

APPROVED AS TO FORM AND
LEGAL SUFFICIENCY

VILLAGE ATTORNEY

Exhibit A

THE CORRADINO GROUP, INC.

CORRADINO

ENGINEERS · PLANNERS · PROGRAM MANAGERS · ENVIRONMENTAL SCIENTISTS

January 17th, 2017

Mr. Jud Kurlancheek, AICP
Building, Zoning, Planning and Public Works Director
Village of Key Biscayne
88 West McIntyre Street, Suite 250
Key Biscayne, Florida 33149

C/O Mr. Paul Abbott
President
HPF Associates
13400 Running Water Road
West Palm Beach, Florida 33148

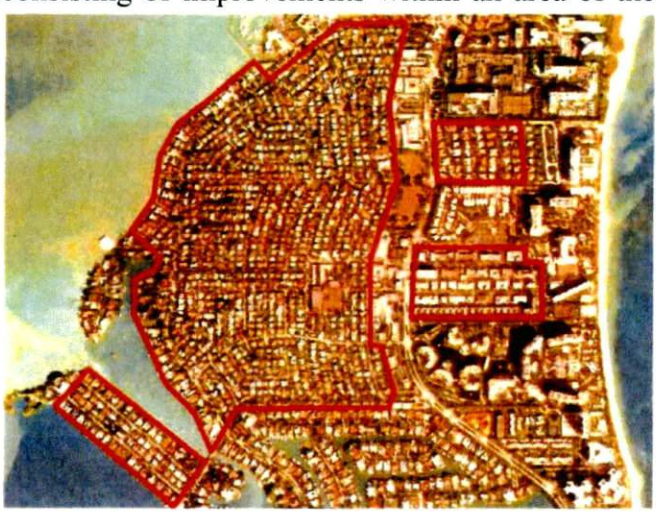
Re: Village of Key Biscayne: **Underground Electric Distribution Facility Conversions - Utility Data Gathering**

Dear Mr. Abbott:

The Corradino Group, Inc. (CORRADINO) is pleased to submit this proposal to provide Underground Electric Distribution Facility Conversions Data Gathering Services on the above-referenced project. This proposal encompasses the effort defined below and includes the following sections: Background, Scope of Work, Compensation, and Understandings.

BACKGROUND

The Village of Key Biscayne (Village) is embarking on an aggressive Utility Hardening Program consisting of improvements within an area of the Village that serves 1,143 single- and multi-family homes, plus government, commercial, office, institutional, and recreational facilities. The Program is to include installation of subsurface Florida Power & Light (FPL) electrical lines, as well as other below-ground utilities such as Comcast and AT&T lines (i.e., cable and telephone) within the same trench.



SCOPE OF WORK

During a December 13, 2016, meeting with Village personnel (Mr. Jud Kurlancheek, Ms. Ana de Varona, Mr. Jose Lopez, Mr. Tony Brown, and Ms. Mariana Dominguez-Hardie) and its Consultant (Mr. Paul Abbott – HPF Associates), CORRADINO was requested to provide a draft proposal for review to the attention of Mr. Abbott; This proposal covers:

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- Mobile Mapping Data Gathering of existing utility features to include:
  - ✓ Manholes, valves, pump stations, fire hydrants, utility risers, sanitary drain and storm water structures, utility poles, light poles, and edge of pavement.
- Preparing residential property electrical service location schematics by:
  - ✓ Conducting an in-the field visit to all single-family and multi-family residences within the proposed undergrounding area limits to visually identify the side of the property in which the electrical service is located.
- Conducting above-ground/below-ground existing utility gathering analysis along the rights-of-way within the undergrounding area limits:
  - ✓ Above-ground utilities - Electric and communication lines.
  - ✓ Below-ground utilities - water distribution, storm and sanitary sewers, electric and communication lines, traffic and pedestrian signalization and control systems, pumping and supply locations.

SCOPE OF WORK

The tasks to be conducted are:

Task 1 – Mobile Mapping Data Collection

This phase of the data gathering will be accomplished by collecting new mobile LiDAR imagery of the existing project conditions and extracting point features from the collected point cloud and imagery. The data captured will include visible utility features along and up to 100-feet outside to the right-of-way, limited only by line-of-sight obstructions. The features listed below in the *Feature Extraction* section of the proposal, beginning on page 3, will be extracted in vector format from the mobile LiDAR data and conform to CAD standards specified by the client.

- Mobile Data Acquisition - CORRADINO will deploy the Optech M1 Mobile Mapping System (MMS) to the project location and drive all lanes of the corridor to collect above-ground features visible from the sensor position. CORRADINO will set 2 GPS base stations within 5 km (16,400 feet) of the project site, one as a primary base and one as a secondary fail-safe, to support the MMS acquisition. Following setting and confirming the control, data acquisition will begin. LiDAR-collected data/imagery will be viewed using real-time acquisition software to ensure the entire data collection area has been covered and to identify and remedy data voids, if any.

  MMS data collection will be conducted to ensure data redundancy. Each roadway will be driven in both directions to complete feature capture. The data will be collected so that there is a minimum side-overlap of 20% between adjacent scan passes. A minimum of 15 minutes will be maintained between the end of one pass and the beginning of the next overlapping pass to ensure that sufficient satellite constellation changes have occurred between passes, reducing the opportunity for bias in the GPS measurements.

- Mobile LiDAR Processing - CORRADINO will use the local Virtual Reference Station (VRS) network and/or established base stations to support the acquisition process. Acquired data will be processed utilizing the onboard Positioning Orientation System (POS) data, local VRS

network and GPS base stations set by CORRADINO. This method is sufficient for subsurface utility location consistent with this scope. However, should increased accuracy levels be desired at a later date, CORRADINO will use additional targeted ground control points in the trajectory solution, which will be collected at an additional cost to be determined at the time of data collection, based upon client specifications.

CORRADINO will use a simultaneous adjustment (least squares) of the raw navigation trajectory with weighted (constrained) project control points to establish the best trajectory and exterior orientation parameters for the LiDAR sensor (and any other sensors such as a camera).

- Feature Extraction - The first step in feature extraction will be converting the data into a point cloud in LASer format. Because of the volume of data collected, CORRADINO will partition (a.k.a. "tile") the project by a 250' x 250', or similar, grid. This will allow users to access, view, and manipulate the deliverables without overwhelming existing computer processors.

  CORRADINO will extract the required planimetric data from the processed point cloud data along the MicroStation CAD environment. Imagery and LiDAR data per "tile" will be loaded into TopoDOT software to classify individual LiDAR clusters through special algorithms. Once the initial classification has been completed, desired features will be classified individually. Within the graphical user interface (GUI), a form will be completed which will include all attributes of the feature being identified. These 'Element Tags' will be exported as shape files to include attributes added during the feature-identification process. The location of each feature, as close to the center of the feature as possible, will be validated. All data will be compiled using three dimensional (3D) digital data collection procedures and will conform to the standards defined by the client. Data will include GPS coordinates, digital images, and metadata for each collected feature. Feature identification and attribution processes will continue for all assigned areas, until each acquisition block is complete.

  The shape files will be imported to a Master Feature Geodatabase. Upon its completion CORRADINO will perform a final QA/QC of the data by applying custom scripts that will flag errors, including missing attributions, misspellings, missing images, etc. The county right-of-way (ROW) and centerline data will be utilized for reference and included in the deliverable.

- The following public ROW data will be extracted from the MMS:
  - Manholes (identified with a point feature, with description)
  - Valves (identified with a point feature, with description)
  - Pump stations (identified as a point feature, with description)
  - Fire hydrants (identified as a point feature, with description)
  - Utility risers (identified as a point feature, with description)
  - Storm structures (to include curb inlet locations, grates and other above ground visible evidence
  - Utility poles (identified with a point feature, with description)
  - Light poles (identified with a point feature and a picture of the light fixture with description)

- Includes the "most-representative" photograph of the light fixture as identified in the imagery collected during the mobile mapping collection
- Edge of pavement (identified with a line feature, with description)

Data may be collected any time after notice to proceed as vertical "control" information will consist of manhole rim elevations recently collected by MDWASD. Horizontal positioning of the dataset will be accomplished through the use of real-time kinematic GPS observations in conjunction with the Mobile Mapping vehicle's on-board GPS and IMU (Inertial Measurement Unit) positioning system. A GPS base station may be established to collect static observations to support post-processing of vehicle trajectories, as needed to support project accuracy expectations. Final data processing will commence upon receipt of vertical control information.

The principal product of Task 1 will be electronic files of extracted data.

Task 2 – Existing Utility Records Data Gathering

An analysis of existing above-ground and below-ground utilities will be performed within the area bounded for the future electrical distribution undergrounding. Utility records will be researched to identify utility owners that may have facilities on or be impacted by the project utilizing the one-call notification center (Sunshine 811), visual inspections and available utility owner records (GIS databases, prior construction plans in the area, direct-buried cable records, distribution maps, transmission maps, service record cards, "As-builts" and Record Drawings, field notes). Electronic and paper communications will be sent to the contacts listed for each utility, with in-person follow-up to facilitate transfer of the available "as-builts", GIS databases and/or shapefiles. The following summarizes the utility stakeholders to be involved in this effort:

- America Traffic Solutions - traffic control ("red-light" cameras) at the following intersections: Crandon Boulevard at Harbor Drive, Crandon Boulevard at Key Colony, and Crandon Boulevard at Galen Drive.
- AmeriGas DBA Siegel Gas -a propane gas service provider typically not found within public rights-of-way with limited impacts to the proposed underground conversions.
- AT&T Florida - communications services provider to private, public and institutional customers with much of the existing facilities being aerial (majority of the residential service provided from rear lot lines).
- Comcast Cable - communications services provider to private, public and institutional customers with much of the existing facilities being aerial (majority of the residential services provided from rear lot lines).
- Miami-Dade County Public Works and Traffic - traffic control facilities that include buried and above-ground cable connecting to traffic signals.
- Florida Power and Light (Distribution) - primary and secondary power services provider to private, public and institutional customers with much of the existing facilities being above-ground, with the majority of the residential properties connected from the rear of the lot.
- Florida Power and Light (Transmission) – high-voltage power provider to the substation at the north end of the Village of Key Biscayne (not impacted by the proposed underground conversions).

- Hotwire Communications - communication services provider to The Sands within the Village of Key Biscayne with subsurface facilities within public rights-of-way.
- Miami-Dade Water and Sewer - water and sewer service provider to private, public and institutional customers with facilities placed within public right-of-way providing essential services requiring the protection of its existing below-ground facilities for uninterrupted service.
- Village of Key Biscayne – the Village plans, installs and maintains the storm water infrastructure placed within the public right-of-way providing storm water management along all Village-owned right-of-way. This infrastructure requires consideration and protection during proposed undergrounding.
- Atlantic Broadband – communication services provider in the Village, but to be determined if service provided in the project area.

All communication with utility owners will be tracked and logged in a *Utility Communication Tracking Log* to identify the timeframes for requests for information and responses from utility owners. All data gathered during this effort will be cataloged and delivered electronically.

The principal product of Task 2 will be the Utility Communication Tracking Log, cataloged electronic vector data and electronic pdf construction as-built/record plans.

Task 3 – Existing Residential Property Electrical Service Schematics

In-field visits to 1,143 properties will be made in an attempt to determine the electric meter location and the telephones service connection, focusing on the side of the structure each service is connected to. This information will be used in the subsequent design by FPL to determine the location for electrical handholes for individual services.

To determine the approximate location of the service, each property will be observed from the street and, where necessary, by using existing aerial photography, and location trends of surrounding properties. The following information will be documented for each property:

- Property address;
- Folio number;
- North arrow;
- Sketch depicting the side of the property where the electric and telephone services are located.

The principal product of Task 3 will be an electronic pdf of containing the sketches noted above.

COMPENSATION

The Scope of Work defines the proposed effort for the not-to-exceed a lump-sum fee $ 198,916.94. Payment requests shall be submitted monthly based on percent of project completion to be accompanied by a progress report covering the work to which the invoice applies. CORRADINO

will begin completing the scope of work once a purchase order and written notice-to-proceed is received. We anticipate completing the project within **six** months.

UNDERSTANDINGS

- All the residents in the project area will be notified of the project.
- The CORRADINO Team will be provided a letter on Village of Key Biscayne letterhead describing the project and a contact number.
- All data gathered from the owning utilities will be cataloged and delivered as-is. The as-built and system data will not be processed or combined.
- The site visit will not include determining service connections that are not visible due to such things as: dense vegetation/landscaping, building modifications.
- The scope of services does not include a subsurface analysis of existing geotechnical conditions and resulting structural features needed for subsequent undergrounding efforts.
- The scope of services does not include performance of Phase I and/or II Environmental Site Assessments to determine if remediation of environmental impacts is improvements necessary for future site development.
- This proposal does not include costs associated with detailed engineering designs, topographic surveying, zoning & platting, legal, environmental, or right-of-way/easement acquisitions.
- The evaluations to be performed are for conceptual planning purposes and are not intended for regulatory approvals or final construction scoping and/or budgeting.
- The scope of services does not include supporting public hearings or presentations with the Village of Key Biscayne.
- This proposal considers the study performed by The Wantman Group, Inc. (WGI), dated August 2016, entitled *"Village of Key Biscayne Underground Utilities Feasibility Study"* to provide reliable information on which the work of this proposal can rely.
- The MMS data extraction limits of the project consists of up to 20 centerline miles (40 lane miles) of suburban 2-lane roadway within the Village of Key Biscayne as described in Appendix A – of the report *"Village of Key Biscayne Underground Utilities Feasibility Study"* with expected project accuracies: Horizontal = 1 foot RMSE; Vertical = 0.10 foot RMSE

We appreciate the opportunity to support the Village with this very important project. Please let us know if you have any questions. Thank you.

Sincerely,
THE CORRADINO GROUP, INC.

Joseph M. Corradino
President

cc: Ana de Varona / Village of Key Biscayne
Jose Lopez / Village of Key Biscayne
Tony Brown / Village of Key Biscayne
Mariana Dominguez-Hardie / Village of Key Biscayne
Robert Regalado / CORRADINO